

SEQUENCE LISTING

<110> Pereira, Andrea Wentworth, Diana Bilodeau Gandhi, Rita <120> KINESIN-LIKE PROTEINS AND METHODS OF USE <130> 07917-198001 <140> US 10/735,972 <141> 2003-12-15 <150> US 60/433,098 <151> 2002-12-13 <160> 16 <170> FastSEQ for Windows Version 4.0 <210> 1 <211> 2697 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (1)...(2694) <400> 1 atg tet gte act gag gaa gae etg tge cae cat atg aaa gta gta gtt 48 Met Ser Val Thr Glu Glu Asp Leu Cys His His Met Lys Val Val Val 10 15 cgt gta cgt ccg gaa aac act aaa gaa aaa gca gct gga ttt cat aaa 96 Arg Val Arg Pro Glu Asn Thr Lys Glu Lys Ala Ala Gly Phe His Lys 20 gtg gtt cat gtt gtg gat aaa cat atc cta gtt ttt gat ccc aaa caa 144 Val Val His Val Val Asp Lys His Ile Leu Val Phe Asp Pro Lys Gln 35 gaa gaa gtc agt ttt ttc cat gga aag aaa act aca aat caa aat qtt 192 Glu Glu Val Ser Phe Phe His Gly Lys Lys Thr Thr Asn Gln Asn Val 50 55 ata aag aaa caa aat aag gat ctt aaa ttt gta ttt gat gct gtt ttt 240 Ile Lys Lys Gln Asn Lys Asp Leu Lys Phe Val Phe Asp Ala Val Phe gat gaa acg tca act cag tca gaa gtt ttt gaa cac act act aag cca 288 Asp Glu Thr Ser Thr Gln Ser Glu Val Phe Glu His Thr Thr Lys Pro 85 90 att ctt cgt agt ttt ttg aat gga tat aat tgc aca gta ctt gcc tat 336

Ile	Leu	Arg	Ser 100	Phe	Leu	Asn	Gly	Tyr 105	Asn	Cys	Thr	Val	Leu 110	Ala	Tyr	
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					tat Tyr											432
					gag Glu 150											480
					cag Gln											528
					gat Asp											576
					aaa Lys											624
					agg Arg											672
					gct Ala 230											720
					aat Asn			_	-		_	_	_			768
					tct Ser											816
	_		_	_	ggc Gly					_				-		864
					gcc Ala											912
					agt Ser 310				-	_		_	_			960
					act Thr											1008

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Asp Thr Tyr Asn	act ctt aag tat gct Thr Leu Lys Tyr Ala 345	
	agc aat gtt ctt aat Ser Asn Val Leu Asn 365	-
	tgt aat gag cag aag Cys Asn Glu Gln Lys 380	
	gcc tat gaa gaa cag Ala Tyr Glu Glu Gln 395	=
	tta atg att tca aac Leu Met Ile Ser Asn 410	
Arg Phe Gln Glu	atc ctg aac tgc ttg Ile Leu Asn Cys Leu 425	
	ctg aag ttg gaa atg Leu Lys Leu Glu Met 445	
	caa caa cag tgc cat Gln Gln Gln Cys His 460	
	gta gaa aag gcc act Val Glu Lys Ala Thr 475	
	act cgt cgc tcc tac Thr Arg Arg Ser Tyr 490	
Glu Leu Lys Gln	ttt gat gag aat act Phe Asp Glu Asn Thr 505	
 	ctc tta agt caa aac Leu Leu Ser Gln Asn 525	
	cat tgt cac cat ttg His Cys His His Leu 540	2
	aga cat atg atg gat Arg His Met Met Asp 555	

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acc cta Thr Leu 580	Arg Ly								1776
gct gct Ala Ala 595		ı Ser A							1824
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aac gat Asn Asp		Gly I							1920
cca gtt Pro Val									1968
gtt aag Val Lys 660	Ile Pr								2016
ccc ttg Pro Leu 675		/ Gln H							2064
cag ctc Gln Leu	_		_		-	_		-	2112
cca gaa Pro Glu		s Arg I							2160
atg aaa Met Lys									2208
ata aac Ile Asn 740	Ser As								2256
cat aat His Asn 755		J Lys G							2304
act ata Thr Ile									2352

			aat Asn								24	100
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			atg Met								24	196
	-		aac Asn	_	_		-	-	_		25	544
			cga Arg 855				-		_		25	92
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<211> 898

<212> PRT

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Asp Glu Ile Lys Glu Glu Lys Ile Cys Ser Thr Ala Val Ser Tyr Leu 150 155 Glu Val Tyr Asn Glu Gln Ile Arg Asp Leu Leu Val Asn Ser Gly Pro 170 Leu Ala Val Arg Glu Asp Thr Gln Lys Gly Val Val His Gly Leu 180 185 Thr Leu His Gln Pro Lys Ser Ser Glu Glu Ile Leu His Leu Leu Asp 200 Asn Gly Asn Lys Asn Arg Thr Gln His Pro Thr Asp Met Asn Ala Thr 215 Ser Ser Arg Ser His Ala Val Phe Gln Ile Tyr Leu Arg Gln Gln Asp 230 235 Lys Thr Ala Ser Ile Asn Gln Asn Val Arg Ile Ala Lys Met Ser Leu 245 250 Ile Asp Leu Ala Gly Ser Glu Arg Ala Ser Thr Ser Gly Ala Lys Gly 265 Thr Arg Phe Val Glu Gly Thr Asn Ile Asn Arg Ser Leu Leu Ala Leu 280 Gly Asn Val Ile Asn Ala Leu Ala Asp Ser Lys Arg Lys Asn Gln His 300 295 Ile Pro Tyr Arg Asn Ser Lys Leu Thr Arg Leu Leu Lys Asp Ser Leu 310 315 Gly Gly Asn Cys Gln Thr Ile Met Ile Ala Ala Val Ser Pro Ser Ser 325 330 Val Phe Tyr Asp Asp Thr Tyr Asn Thr Leu Lys Tyr Ala Asn Arg Ala 345 Lys Asp Ile Lys Ser Ser Leu Lys Ser Asn Val Leu Asn Val Asn Asn 360 365 His Ile Thr Gln Tyr Val Lys Ile Cys Asn Glu Gln Lys Ala Glu Ile 375 Leu Leu Lys Glu Lys Leu Lys Ala Tyr Glu Glu Gln Lys Ala Phe 390 395 Thr Asn Glu Asn Asp Gln Ala Lys Leu Met Ile Ser Asn Pro Gln Glu 410 Lys Glu Ile Glu Arg Phe Gln Glu Ile Leu Asn Cys Leu Phe Gln Asn 420 425 Arg Glu Glu Ile Arg Gln Glu Tyr Leu Lys Leu Glu Met Leu Lys 440 Glu Asn Glu Leu Lys Ser Phe Tyr Gln Gln Gln Cys His Lys Gln Ile 455 Glu Met Met Cys Ser Glu Asp Lys Val Glu Lys Ala Thr Gly Lys Arg 470 475 Asp His Arg Leu Ala Met Leu Lys Thr Arg Arg Ser Tyr Leu Glu Lys 485 490 Arg Arg Glu Glu Leu Lys Gln Phe Asp Glu Asn Thr Asn Trp Leu 505 His Arg Val Glu Lys Glu Met Gly Leu Leu Ser Gln Asn Gly His Ile 520 Pro Lys Glu Leu Lys Lys Asp Leu His Cys His His Leu His Leu Gln 535 540 Asn Lys Asp Leu Lys Ala Gln Ile Arg His Met Met Asp Leu Ala Cys 550 555 Leu Gln Glu Gln His Arg Gln Thr Glu Ala Val Leu Asn Ala Leu 570 Leu Pro Thr Leu Arg Lys Gln Tyr Cys Thr Leu Lys Glu Ala Gly Leu Ser Asn Ala Ala Phe Glu Ser Asp Phe Lys Glu Ile Glu His Leu Val

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Glu Arg Lys Lys Val Val Trp Ala Asp Gln Thr Ala Glu Gln Pro
Lys Gln Asn Asp Leu Pro Gly Ile Ser Val Leu Met Thr Phe Pro Gln
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Leu Gly Pro Val Gln Pro Ile Pro Cys Cys Ser Ser Ser Gly Gly Thr
                                   650
Asn Leu Val Lys Ile Pro Thr Glu Lys Arg Thr Arg Arg Lys Leu Met
                               665
           660
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Pro Ser Pro Leu Lys Gly Gln His Thr Leu Lys Ser Pro Pro Ser Gln
                           680
Ser Val Gln Leu Asn Asp Ser Leu Ser Lys Glu Leu Gln Pro Ile Val
                       695
                                           700
Tyr Thr Pro Glu Asp Cys Arg Lys Ala Phe Gln Asn Pro Ser Thr Val
                   710
                                       715
Thr Leu Met Lys Pro Ser Ser Phe Thr Thr Ser Phe Gln Ala Ile Ser
               725
                                   730
Ser Asn Ile Asn Ser Asp Asn Cys Leu Lys Met Leu Cys Glu Val Ala
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                               745
Ile Pro His Asn Arg Arg Lys Glu Cys Gly Gln Glu Asp Leu Asp Ser
                           760
Thr Phe Thr Ile Cys Glu Asp Ile Lys Ser Ser Lys Cys Lys Leu Pro
                       775
Glu Gln Glu Ser Leu Pro Asn Asp Asn Lys Asp Ile Leu Gln Arg Leu
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                                       795
Asp Pro Ser Ser Phe Ser Thr Lys His Ser Met Pro Val Pro Ser Met
               805
                                   810
Val Pro Ser Tyr Met Ala Met Thr Thr Ala Ala Lys Arg Lys
                               825
Leu Thr Ser Ser Thr Ser Asn Ser Ser Leu Thr Ala Asp Val Asn Ser
                           840
                                               845
Gly Phe Ala Lys Arg Val Arg Gln Asp Asn Ser Ser Glu Lys His Leu
                       855
                                           860
Gln Glu Asn Lys Pro Thr Met Glu His Lys Arg Asn Ile Cys Lys Ile
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<211> 814

<212> PRT

<213> Drosophila melanogaster

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 Val
 Arg

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 Val
 Arg
 Glu
 Leu
 Glu
 Lys
 Gln
 Arg
 Ser
 Ile
 Ile
 Lys

 Val
 Met
 Asp
 Arg
 Ser
 Ala
 Leu
 Pro
 Asp
 Pro
 Asp
 Glu
 Glu
 Asp
 Asp
 Asp
 Ile
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 Lys
 Lys
 Gln
 Pro
 Tyr
 Arg
 Asp
 Ile
 Thr
 Lys
 Lys
 Ile
 Thr
 Asp
 Ile
 Ile

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			100					105				Val	110		
		115					120			_		Glu 125			
	130					135					140	Lys			
145					150					155		Tyr			160
				165					170			Gly		175	
			180					185			_	Leu	190		
		195					200		_			Met 205		_	•
	210					215		_			220	Glu			-
225					230					235		Glu			240
				245					250			Leu		255	
			260					265			_	Phe	270		_
		275					280					Cys 285 Ser			_
	290					295					300	Thr			
305					310					315		Thr			320
				325					330		_	Thr	-	335	
			340					345		_		Val	350	_	
		355					360					365 Arg	_	_	
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385					390					395		Asp			400
				405					410			Met		415	
			420					425			_	Glu	430		_
		435					440					445 Gln			
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465					470					475		Glu			480
				485					490			Ser		495	_
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		515					520	_	_	_		525 Ile			
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Phe Ala Asp Ser Glu Ala Asn Thr Lys Met Ala Glu Met Asn Pro Leu
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Ala Val Pro Val Ala Leu Arg Ser Ser Ala Gln Glu Glu Glu Pro
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Thr Cys Ser Leu Thr Ala Ser Ala Lys Lys Arg Gln Arg Gln Ala Ala
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Gln Ser Asp Asp Leu His Leu Ser Met Glu Asp Phe Asp Ser Gln
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Asp Thr Glu Ser Asp Ser Glu Glu Leu His Arg Thr Phe Lys Arg Pro
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Ser Ser Ser Thr Ser Ser Ser Ser Ala Arg Lys Ala Leu Thr Ala
                        695
                                            700
Thr Val Thr Lys Pro Arg Thr Val Gln Gln Arg Leu Val Ser Asp Leu
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                                        715
Ile Ser Asp Gln Asn Val Arg Gly Gly Asn Glu Lys Ile Lys Lys Ala
                                    730
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Leu Leu Lys Ser Asn His Phe Thr Ala Gln Gly Leu Gln Arg Thr Leu
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                                                    750
Ala Ala Ala Ser Leu Ala Lys Glu Asn Val Lys Tyr Asn Ala Asn Tyr
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                            760
                                                765
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Ser Thr Leu Ala Arg Lys Pro Leu Gly Ser Ala Ser Lys Glu Pro Pro
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                                                                       96
Pro Tyr Asn Val Arg Glu Leu Glu Gln Lys Gln Arg Ser Ile Ile Lys
             20
gtc atg gat cgt tcg gca ctg ctg ttc gat ccc gac gag gag gac gat
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Val Met Asp Arg Ser Ala Leu Leu Phe Asp Pro Asp Glu Glu Asp Asp
         35
                             40
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	_			_	ttg Leu 70		_	_		-		_		-		24	10
					gat Asp											28	38
					gga Gly											33	36
					aca Thr											38	34
					acc Thr											43	32
					aag Lys 150											4 8	30
					atg Met		_				_					52	28
					aat Asn											57	76
					gag Glu											62	24
					cac His											67	72
					cag Gln 230											72	20
					gtc Val											76	68
					acg Thr											81	16
gcc	agc	atc	aac	aaa	agt	ctc	tta	gct	ttg	gga	aat	tgc	ata	aac	aag	86	б4

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					tcg Ser 310											960	
					agc Ser											1008	
					cga Arg											1056	
					aag Lys											1104	
			_	-	gag Glu			_				_		_		1152	
					act Thr 390											1200	
					aag Lys											1248	
					ctt Leu											1296	
					tac Tyr											1344	
					tgt Cys											1392	
					tac Tyr 470											1440	
					ccc Pro											1488	
					cta Leu											1536	

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			gtg aac gca at Val Asn Ala II 540		
			aag too tto co Lys Ser Phe A: 555	rg Thr Ala	•
			ctc gag gat go Leu Glu Asp G 570		
			agg ttg ctg co Arg Leu Leu A		
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			gcc cag gag ga Ala Gln Glu G 620		
			aag cga caa ad Lys Arg Gln A: 635	rg Gln Ala .	
			atg gag gac t Met Glu Asp Pl 650		
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cga aat cta Arg Asn Leu 675	Asn Glu Thr	cag gtc ctg Gln Val Leu 680	ggt ccc tgc ac Gly Pro Cys Sc 69	gc agt agt er Ser Ser 85	tct 2064 Ser
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			cag cga ctg g Gln Arg Leu V 715	al Ser Asp	
			aat gaa aag a Asn Glu Lys I 730		

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gtg cgc aag agt cca cga gcg cta atg gcc aaa gcc ctt gca ggc acc Val Arg Lys Ser Pro Arg Ala Leu Met Ala Lys Ala Leu Ala Gly Thr 770 775 780	2352
tcg acg ctt gcg aga aaa ccg ctg gga tcg gcc agt aag gag ccg cct Ser Thr Leu Ala Arg Lys Pro Leu Gly Ser Ala Ser Lys Glu Pro Pro 785 790 795 800	2400
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